CLAIMS

1. A process for preparing bead polymers having an average particle size of 1 to 40 μm, comprising:

contacting:

at least one polymerizable mix which comprises at least 50% by weight of at least one (meth)acrylate monomer,

at least one aluminum compound, and

an aqueous phase,

to prepare a mixture;

dispersing said mixture at a shear rate $\geq 10^3$ s^{-1} to form a dispersion, wherein said dispersion is stabilized by said aluminum compound; and

polymerizing to produce bead polymers having an average particle size of 1 to 40 μm.

2. The process according to Claim 1, wherein said aluminum compound is $Al(OH)_3$.

3. The process according to Claim 1, wherein said aluminum compound is $Al(OH)_3$, and the process further comprises preparing the $Al(OH)_3$ by precipitation.

4. The process according to Claim 1, wherein the concentration of the aluminum compound, based on the weight of the polymerizable mix, is 0.5 to 200% by weight.

5. The process according to Claim 1, wherein the concentration of the aluminum compound, based on the weight of the polymerizable mix, is 3 to 100% by weight.

6. The process according to Claim 1, wherein the concentration of the aluminum compound, based on the weight of the polymerizable mix, is 4 to 20% by weight.

7. The process according to Claim 1, wherein the bead polymers have an average particle size of 5 to 20 μm.

8. The process according to Claim 1, wherein the polymerizable mix comprises at least 60% by weight of (meth)acrylate monomer.

9. The process according to Claim 1, wherein said mixture further comprises at least one emulsifier.

10. The process according to Claim 1, wherein said mixture further comprises at least one emulsifier, and wherein the concentration of the emulsifier, based on the weight of the aluminum compound, is 0 to 5% by weight.

11. The process according to Claim 1, wherein said mixture further comprises at least one emulsifier, and wherein the concentration of the emulsifier, based on the weight of the aluminum compound, is 0.3 to 3% by weight.

12. The process according to Claim 1, wherein, after the polymerizing, said bead polymers are comprised within a second dispersion, and wherein the process further comprises filtering the second dispersion.

13. The process according to Claim 1, wherein, after the polymerizing, said bead polymers are comprised within a second dispersion, and wherein the process further comprises adding at least one acid to the second dispersion.

14. The process according to Claim 1, wherein, after the polymerizing, said bead polymers are comprised within a second dispersion, wherein the process further comprises adding at least one acid to the second dispersion, filtering, and drying the bead polymers.

15. The process according to Claim 1, further comprising contacting said bead polymers with at least one matrix monomer or polymer.

16. The mixture prepared by the process of Claim 1.

17. The dispersion prepared by the process of Claim 1.

18. The bead polymers prepared by the process of Claim 1.

19. A PAMA plastisol, comprising the bead polymers prepared by the process of Claim 1.

20. A dental composition, comprising the bead polymers prepared by the process of Claim 1.

21. A porous mould, comprising at least one plastic and the bead polymers prepared by the process of Claim 1.

22. A moulding composition, comprising the bead polymers prepared by the process of Claim 1.

23. A moulding having at least one matt surface, comprising the bead polymers prepared by the process of Claim 1.

24. A composition, comprising the bead polymers prepared by the process of Claim 1 in contact with at least one matrix polymer.

25. A process for preparing bead polymers having an average particle size of 1 to 40 μm, comprising:

contacting:

at least one polymerizable mix which comprises at least 50% by weight of at least one (meth)acrylate monomer,

at least one means for stabilizing a dispersion, and

an aqueous phase,

to prepare a mixture;

dispersing said mixture at a shear rate $\geq 10^3\ s^{-1}$ to form the dispersion, wherein said dispersion is stabilized by said means for stabilizing; and

polymerizing to produce bead polymers having an average particle size of 1 to 40 μm.

26. The process according to Claim 1, wherein said means for stabilizing comprises at least one aluminum compound.